

TECHNICAL MEMORANDUM

TO: Ms. Rebecca Chu – U.S. Environmental Protection Agency
Mr. David Clark – U.S. Army Corps of Engineers

cc: Mr. E. Gilbert Leon Jr., Earle M. Jorgensen Company
Mr. Miles Dyer, Jorgensen Forge Corporation
Messrs. William Joyce and Ian Sutton; Joyce Ziker Parkinson, PLLC
Messrs. Ryan Barth and David Templeton and Ms. Elizabeth Appy, Anchor QEA

FROM: Amy Essig Desai, Principal Scientist
Peter Jewett, L.G., L.E.G., Principal Engineering Geologist
Teresa Michelsen, Ph.D., Senior Environmental Scientist

DATE: January 8, 2016

RE: **SUMMARY OF JANUARY 6, 2016 TECHNICAL MEETING
JORGENSEN FORGE EARLY ACTION AREA
SEATTLE, WASHINGTON
U.S. EPA DOCKET NO. CERCLA-10-2013-0032
FARALLON PN: 831-032**

Farallon Consulting, L.L.C. (Farallon) has prepared this Technical Memorandum on behalf of Earle M. Jorgensen Company (EMJ) to provide a summary of the topics discussed, decisions reached, and action items identified at the January 6, 2016 meeting between Farallon and the U.S. Environmental Protection Agency (EPA). The purpose of the meeting was to discuss improving communications, the Farallon project team roles and responsibilities, upcoming field work and roles and responsibilities, and the schedule for preparation of the data evaluation reports following completion of the additional sediment sampling. In attendance were Ms. Rebecca Chu, EPA Region 10; Mr. David Clark, U.S. Army Corps of Engineers (USACE); and Ms. Amy Essig Desai, Mr. Peter Jewett, and Dr. Teresa Michelsen, Farallon. Specific agreements reached are underlined in the text for EPA review, and action items for both Farallon and EPA are provided at the end of this Technical Memorandum.

Improving Communication

Farallon confirmed EMJ's commitment to enhancing the working relationship with EPA by improving communication and rebuilding trust. Farallon will provide a larger technical team for



oversight and management of the project and to assure that the scope of work required by the Administrative Settlement Agreement and Order on Consent (AOC) and associated plans is adhered to. Communications with EPA will be consistently documented in writing. There will be more collaborative discussions of the data with EPA and premature data interpretation will be avoided. Written documentation of changes in approach or deviations from the plans will be provided on a timely basis.

Farallon Team

Farallon team members will be more directly involved in the project in the future, at the request of EMJ. In addition to the AOC Project Coordinator, Ms. Amy Essig Desai, the Farallon team includes:

- Mr. Peter Jewett L.G., L.E.G., Principal-in-Charge, to provide high-level review of all project deliverables, communications, and resource allocation;
- Dr. Teresa Michelsen, Senior Environmental Scientist, to provide technical review of all products from the consulting team, ensure accurate and appropriate data interpretation, and manage production of technical reports and memoranda; and
- Ms. Kim Magruder Carlton, Associate Scientist, to coordinate Farallon's field team and provide oversight of field sampling activities.

EPA suggested that Farallon could select and provide in writing an alternate to Ms. Desai as AOC Project Coordinator to serve as backup Project Coordinator. Farallon will propose a Project Coordinator alternate to EPA in writing after coordinating internally.

Upcoming Field Work and Requested Modifications

The following possible modifications to upcoming field work were discussed (Figure 1; Attachment A):

- Stations LTR-16 and LTR-20 are located outside the Remedial Action Boundary (RAB), where no backfill was placed. Whether the 0- to 60-centimeter (cm) sediment samples, originally intended to characterize backfill material, should be collected at these stations was discussed. It was agreed that the 0- to 60-cm sediment samples at these two stations will be collected and archived, in case the data become useful in characterizing impacts from stormwater discharged from Outfall 003.
- Stations LTR-10 and LTR-18 are located at the edge of the RAB, where a full 60 cm of backfill material may not be present. It was agreed that the core sediment samples will be inspected and photographed to identify the backfill material, and if the backfill material is less than 60 cm at these stations, the depth of these samples will be adjusted to collect the entire column of backfill material that is present without collecting underlying sediments. EPA and Farallon will be present during core sediment sample processing to verify the selected interval.



- The location of Station LTR-7 was adjusted during the October 2015 sampling event due to difficulty collecting the surface sediment intervals with the Van Veen sampler because of the hard substrate present there. It was agreed that the 0- to 2-cm and 0- to 10-cm surface sediment intervals for this station will be collected at the revised location of Station LTR-7 during the January 2016 sampling event for consistency and to avoid similar sampling difficulties.
- Resolution was not fully reached on core sediment sampling at Station LTR-7. Farallon agreed to attempt core sampling at the original Station LTR-7 location, and will defer to the operator's judgment regarding potential damage to the coring/drilling equipment that may be caused by attempting to drill through the riprap and cobble that is present. Should core sediment samples be unobtainable at that location or elsewhere within the former coffer dam area, a final decision was not reached on whether 1) core samples should be taken at the revised Station LTR-7 location, which is just outside the former coffer dam area; 2) another approach to collecting the Station LTR-7 core samples should be attempted (e.g., angled drilling); or 3) to rely on the z-layer sample already collected if a core sample cannot be collected under existing conditions. EPA and Farallon agreed to consider this issue and consult with the USACE and Anchor QEA, LLC (Anchor QEA) regarding possible alternatives.
- At all locations within the backfill, vibracoring may be challenging due to the nature of the backfill material. Normally, an 8-foot core is used with a 75 percent recovery criterion (i.e., the top 6 feet). However, to collect the 0- to 60-cm sediment samples, only the top 2 feet is needed. The core recovery criterion could be revised to 50 percent (i.e., at least the top 4 feet) without compromising collection of the 0- to 60-cm interval, minimizing the need to move the stations and the coring rig from the planned locations. EPA will consider this request and provide its decision on whether revising the recovery criterion is acceptable or moving stations is preferable if 75 percent recovery is not achieved.

Field Oversight

EPA and Farallon will each provide 100 percent oversight of the field work. Ms. Carlton will be the point of contact in the field for EPA, USACE, and Anchor QEA. Ms. Carlton will be in direct contact and coordinate with Ms. Desai should decisions or modifications regarding the scope of work or field activities need to be made. Decisions and modifications will be documented in writing immediately and submitted to EPA for review and approval. If decisions are made in the field by EPA or USACE for emergency, health and safety, or timely response reasons, these decisions will be communicated by Ms. Carlton to Ms. Desai for documentation in the same manner.

One to two project team members each from EPA and Farallon will be present during sampling and coring activities, with one Farallon project team member likely present during Van Veen sampling. During coring activities, two Farallon project team members potentially will be present: one with the drill/core sampler and one to observe selection of core intervals while core



samples are being processed. The USACE indicated that they would be working on their anticipated field schedule over the next few days, and Farallon will do the same, and coordinate with Anchor QEA.

Data Evaluation Reports

It was agreed that in lieu of shortening the overall 90-day timeline, a mid-point working meeting could be held with EPA and the USACE, approximately 45 days following receipt of validated data, to review the data and discuss preliminary interpretations. An early data deliverable similar to that provided for the October 2015 sampling event will be provided 2 weeks in advance with figures and tables presenting the data. This collaborative approach will provide an early opportunity to reach a common understanding of the results and streamline comments and revisions of the draft reports.

Upcoming Meeting

A meeting is planned for January 15, 2016 with EPA, EMJ, legal counsel, and Farallon to discuss the path forward and specific language in the Construction Quality Assurance Plan regarding the Removal Action Levels.

Farallon Action Items

- Identify and submit in writing an alternate AOC Project Coordinator;
- Consider whether there are alternative approaches to obtaining the Station LTR-7 z-layer sample; and
- Identify schedule for field personnel and coordinate with Anchor QEA.

EPA/USACE Action Items

- Review the attached requested written modifications, confirm that the modifications are accepted, and provide decisions on outstanding modification issues identified above, if possible; and
- Identify the anticipated schedule for field personnel and oversight and provide to Farallon for coordination with Anchor QEA.

Attachments: Figure 1, *Interim Surface Sediment Sample Target and Actual Locations*
Attachment A, Requested Modifications to the Operations, Monitoring, and
Maintenance Plan, Addendum No. 2

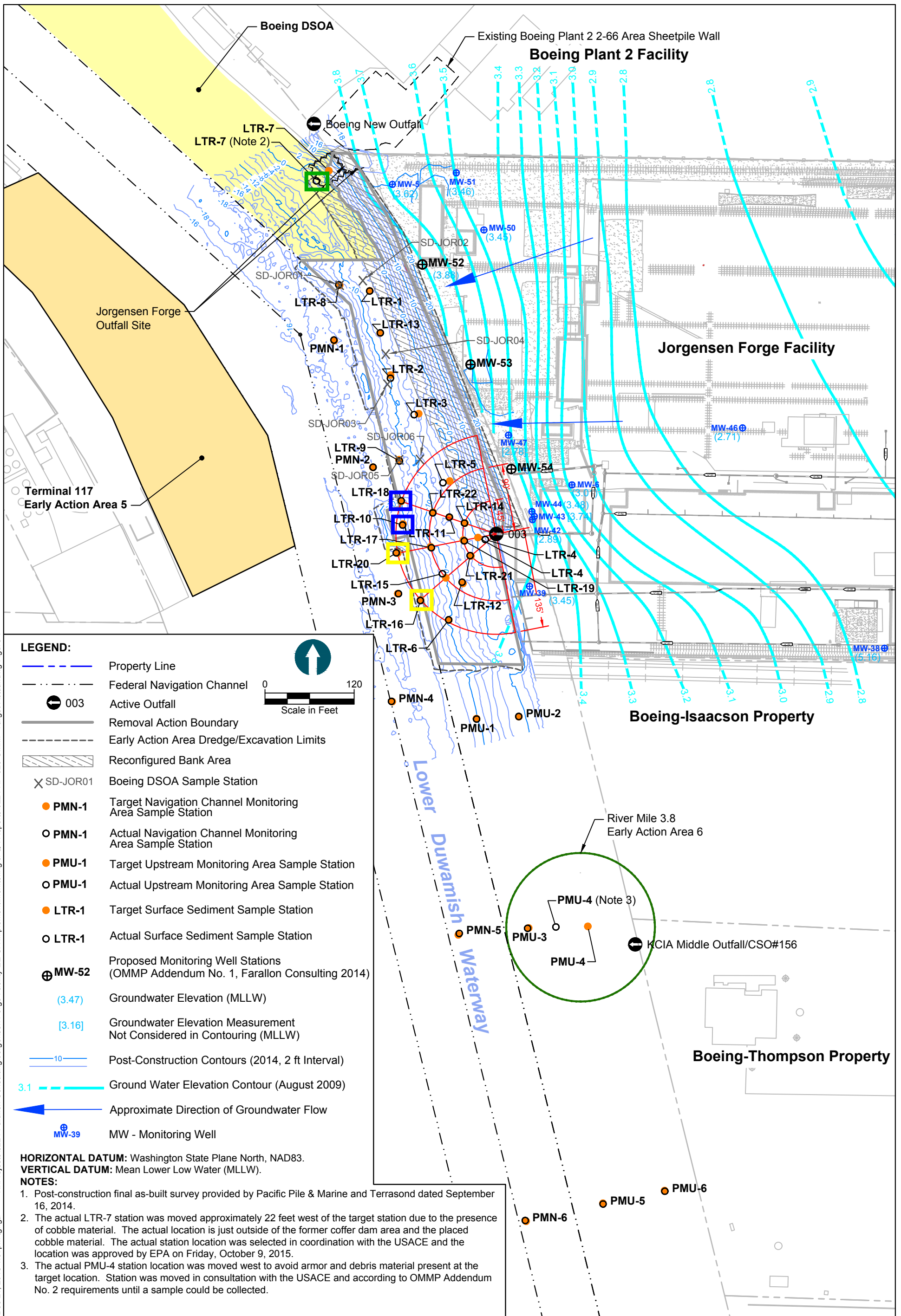
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FIGURE

**SUMMARY OF JANUARY 6, 2016 TECHNICAL MEETING
Jorgensen Forge Early Action Area
Seattle, Washington**

Farallon PN: 831-032

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ATTACHMENT A
REQUESTED MODIFICATIONS TO THE OPERATIONS, MONITORING,
AND MAINTENANCE PLAN, ADDENDUM NO. 2

SUMMARY OF JANUARY 6, 2016 TECHNICAL MEETING
Jorgensen Forge Early Action Area
Seattle, Washington

Farallon PN: 831-032

Requested Modifications to the Operations, Monitoring, and Maintenance Plan, Addendum No. 2

1. Section 2.2.1, Stations LTR-16 and LRT-20 (yellow squares, Figure 1). These two stations are the outermost stations required by the U.S. Environmental Protection Agency (EPA) to characterize potential impacts from Outfall 003. At the planned distance, they fall outside the Remedial Action Boundary (RAB), where no backfill material was placed. Therefore, the 0- to 60-centimeter (cm) sampling interval will not meet its objective to characterize the backfill material.

Proposal: Collect the 0- to 2-cm and 0- to 10-cm intervals as planned at these stations. Collect and archive the 0- to 60-cm interval at these stations.

2. Section 2.2.1, Stations LTR-10 and LTR-18 (blue squares, Figure 1). These two stations are at the edge of the navigation channel and may have less than 60 cm of backfill material above native material. The 0- to 60-cm interval is intended to characterize the quality of the backfill material and ideally should not include underlying sediments.

Proposal: Should inspection of the core identify less than 60 cm of backfill material present in the core, EPA will be notified and requested to approve collection of a core interval that includes the entire depth of backfill material at each station. Photographs will be taken to document the need for the deviation and written documentation will follow the field decision. EMJ will plan ahead and inform EPA of when these samples will be processed to ensure that all parties are available to observe and approve the modification within the time constraints of sample processing for laboratory analysis.

3. Section 2.2.1, Station LTR-7 (green square, Figure 1). As described in OMMP Addendum No. 2, Section 2.2.2.1, and confirmed during the October 2015 sampling event, collection of samples at the original location may not be possible due to the presence of 6 inches of cobble material overlying 1.5 feet of riprap within the former coffer dam area. During the October 2015 surface sampling event, in coordination with EPA, the station was relocated as close as possible to the originally planned location. The relocated station was outside the RAB and within the Boeing DSOA, where no backfill material was placed by EMJ.

Alternatives for core sampling include: 1) collecting core samples at the revised LTR-7 location, although this station does not meet the objectives of core sampling; 2) identifying an alternative approach for collecting a core sample within the former coffer dam area; and 3) relying on the existing z-layer sample collected in this area. EPA/COE and EMJ are continuing to consider these alternatives.

Partial Proposal: Collect surface sampling intervals (0- to 2-cm and 0- to 10-cm depths) at the revised LTR-7 location, consistent with the October 2015 sampling location. A decision on the core sampling is pending as noted above.

4. FSP, Section 2.3.1.1 (Acceptance Criteria, 2nd bullet). Currently, one of the acceptance criterion for the vibrocore is 75% recovery (the top 6 feet out of an 8-foot core). However, only the top two 2 feet are needed to collect the 0- to 60-cm interval. Due to the difficulty of coring through the granular material of the backfill, 75% of the full 8-foot core may not always be

possible to collect; however, EMJ expects it to be possible to retain and sample the top 4 or more feet, thus achieving the sampling objectives. The FSP currently states that the sampling location will be moved 5 feet if this acceptance criterion is not met. However, it is possible that the same types of challenges would be encountered at any new station since the same material is present throughout the backfill and it would be ideal to avoid moving the original stations, if possible.

Proposal: EMJ suggests revising the vibracore acceptance criterion to 50% recovery, corresponding to at least the top 4 feet of the 8-foot core. This would allow the top 2 feet, or 0- to 60-cm sample, to be collected without difficulty and the sampling objectives to be met without moving the locations of the stations. Alternatively, the sampling team could follow the plan as written and move the stations 5 feet if the acceptance criterion is not met. Please let us know which of these alternatives EPA prefers.